

REMARKS

The foregoing amendment amends claims 1, 11 and 12, and adds claim 17. Now pending in the application are claims 1-17, of which claims 1 and 17 are independent. The following comments address all stated grounds for rejection and place the presently pending claims, as identified above, in condition for allowance.

Patentable Subject Matter

Claims 3, 6-10 and 13-15 are indicated to recite patentable subject matter and would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 11-12 are also indicated to recite patentable subject matter and would be allowable if rewritten to overcome the rejection under 35 U.S.C. § 112, second paragraph, as set forth below.

Claim Amendments

Applicants amend claim 1 to recite a nozzle including a tube body having a suction hole directed toward the secondary port. Support for the claim amendment can be found in the figures, such as Figs. 2, 3, 5 and 6, see reference numeral 94, and corresponding descriptions, for example, at page 16, lines 24-27 in the specification of the pending application. No new matter is added.

Rejection of Claims 11-12 under 35 U.S.C. § 112

Claims 11 and 12 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In the foregoing claim amendments, Applicants amend claims 11 and 12 to address the issues raised by the Examiner in the Office Action. In light of the foregoing amendment, Applicants request that the Examiner reconsider and withdraw the rejection of claims 11 and 12 under 35 U.S.C. § 112, second paragraph, and pass the claims to allowance.

Rejection of Claims 1, 4 and 16 under 35 U.S.C. § 102

Claims 1, 4 and 16 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,381,819 (“Gotthelf”). Applicants respectfully traverse this rejection for the following reasons.

The present invention is directed, at least in part, to a regulator including a body, a valve head, a rod coupled to the valve head, a diaphragm engaging the rod, a nozzle, a back pressure chamber and an aspirator chamber. The nozzle includes a tube body having a suction hole directed toward the secondary port of the body. The aspirator chamber is defined for developing a pressure lower than a pressure in the secondary port due to the suction caused by the nozzle. Claims 4 and 16 depends from claim 1.

In an embodiment of the present invention, the regulator includes a nozzle (94) having a tube body with a suction hole (92) directed toward to a secondary port (14). With the nozzle (94), the pressure in the aspirator chamber (80) can be made lower than the pressure in the secondary port, which is the pressure of a fluid flowing through the secondary port.

Applicants respectfully submit that Gotthelf does not disclose *a nozzle including a tube body having a suction hole directed toward the secondary port of the body, and an aspirator chamber defined for developing a pressure lower than a pressure in the secondary port due to a suction caused by the nozzle*, as recited in claim 1.

Gotthelf discloses a regulator having a valve head connected to a diaphragm (64) via a rod. The rod includes a passage (54) communicating with a recess (50) and another recess (42). Gotthelf also discloses that the regulator has an aspirator hole (104) communicating with the recess (50) and a discharge port (20). See Gotthelf, Figs. 3-5.

In Gotthelf, the aspirator hole (104) is positioned between a valving element (44), which is disposed substantially in the center of the regulator body (12), and the discharge port (20). The aspirator hole (104) of the Gotthelf reference is a pore (orifice) penetrating the inner wall of the regulator body (12). See Gotthelf, Fig. 5.

In comparison, the nozzle of the present invention includes a tube body having a suction hole directed toward the secondary port. In the present invention, the nozzle sucks the air in the aspirator chamber, and makes the pressure in the aspirator chamber lower than the pressure in the secondary port. Gotthelf does not disclose a nozzle including a tube body having a suction hole directed toward the secondary port, as recited in the claimed invention. The aspirator hole (104) of the Gotthelf reference is formed at a central portion with a predetermined distance from the discharge port (20). That is, the aspirator hole (104) of the Gotthelf reference does not face the discharge portion (20), and is different from the nozzle of the present invention.

Moreover, since the aspirator hole (104) of the Gotthelf reference is a pore penetrating the inner wall of the regulator body (12), the pressure in the recess (50) is gradually reduced. In contrast, the nozzle of the present invention rapidly reduces the pressure in the aspirator chamber, and performs a more effective aspiration operation than Gotthelf. Gotthelf does not disclose that the pressure in the aspirator chamber is made lower than the pressure in the secondary port due to the suction caused by the nozzle, as recited in the claimed invention.

In light of the foregoing claim amendments and arguments, Applicants submit that the Gotthelf does not disclose each and every element of claim 1. Applicants therefore request that the Examiner reconsider and withdraw the rejection of claims 1, 4 and 16 under 35 U.S.C. §102(b), and pass the claims to allowance.

Rejection of Claim 5 under 35 U.S.C. § 103

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,381,819 ("Gotthelf"). Applicants respectfully traverse this rejection for the following reasons.

Claim 5 depends from claim 1 and adds separate and patentable limitations to claim 1. In the Office Action, the Examiner asserts that the limitation added in claim 5 is well known and hence the subject matter of claim 5 is obvious over Gotthelf.

Applicants respectfully submit that Gotthelf does not teach or suggest *a nozzle including a tube body having a suction hole directed toward the secondary port of the body and an aspirator chamber defined for developing a pressure lower than a pressure in the secondary port due to a suction caused by the nozzle*, as recited in claim 1. Claim 5, which depends from claim 1, is not rendered obvious over the cited prior art reference. Applicants therefore request that the Examiner reconsider and withdraw the rejection of claim 5 under 35 U.S.C. §103(a), and pass the claim to allowance.

Rejection of Claim 2 under 35 U.S.C. § 103

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,381,819 (“Gotthelf”) in view of U.S. Patent No. 2,841,173 (“Masom”). Applicants respectfully traverse this rejection for the following reasons.

Claim 5 depends from claim 1 and adds separate and patentable limitations to claim 1. The Examiner cites Masom to provide teachings for the limitations added in claim 2.

Applicants respectfully submit that Masom also does not teach or suggest *a nozzle including a tube body having a suction hole directed toward the secondary port of the body and an aspirator chamber defined for developing a pressure lower than a pressure in the secondary port due to a suction caused by the nozzle*, as recited in claim 1.

Masom teaches air control valves adapted to provide a flow of pressured air to the combustion chamber of a device in which liquid fuel is burned in air. Masom, however, does not teach or suggest the use of a nozzle including a tube body with a suction hole directed toward the secondary port of the body to develop a pressure in the aspirator chamber that is lower than a pressure in the secondary port due to the suction caused by the nozzle, as recited in the claimed invention.

In light of the foregoing claim amendments and arguments, Applicants submit that Gotthelf and Masom do not teach or suggest all of the limitations of claim 1. Claim 2, which depends from claim 1, is not rendered obvious over the cited prior art references. Applicants

therefore request that the Examiner reconsider and withdraw the rejection of claim 2 under 35 U.S.C. §103(a), and pass the claim to allowance.

New Claim

Applicants add new claim 17 to rewrite claim 3 including all of the limitations of base claim 1 and intervening claim 2. Since claim 3 is indicated to recite patentable subject matter, Applicants submit that claim 17 is in condition for allowance.

Office Action Summary

The Office Action Summary states that claims 1-15 are pending in the present application. Since claim 16 is also pending in the present application, Applicants assume that claim 16 is inadvertently missing in the Office Action Summary.

Conclusion

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

By 

Anthony A. Lauretano
Registration No. 38,220
LAHIVE & COCKFIELD, LLP
28 State Street
Boston, Massachusetts 02109
(617) 227-7400
(617) 742-4214 (Fax)
Attorney/Agent For Applicant